

**Amendments to The Claims:**

This listing of claims will replace all prior versions, and listing, of claims in the application:

**Listing of Claims:**

1. (currently amended): A computer-program-based method for providing a feedback control for a given set of entry and target control quantities  $\chi$  ~~and  $\mu$  and  $u$~~  of a system model, the method comprising a repetition of the following steps:

a) providing a time-dependent simulation system model of a system in a computer memory for simulating performance of real hardware for a number  $n$  of iterations;

~~ab)~~ providing a predetermined starting value  $\chi'_1$  for each of said entry control quantities  $\chi$  in said model,

~~bc)~~ running the model based on said starting values and obtaining a resulting actual value for each of said target control ~~quantities  $\mu$~~  quantities  $u$ ,

~~cd)~~ using the values obtained ~~for  $\mu$  for  $u$~~  to define a new start value for  $\chi$  for use in a repeated modeling step,

whereby the method comprises the following formula to calculate the respective next value of the entry control quantities:

$$\chi'_{n+1} = \frac{v_n}{1 + \rho_n(1 - v_n)} \quad (6a)$$

where  $\rho_n$  is ~~a suitable parameter~~ an accumulated wait time divided by an accumulated processing time of the system and

$$v_n = (n+1)u - nu_n \quad (6b)$$

$\chi'_n$  ~~is being~~ valid for the next iteration only ~~while  $\mu$~~  while  $u_n$  and  $p_n$  are values measured from the beginning of the simulation.

2. (currently amended): The method according to claim 1 further comprising simulating a multi-processor system in which said control quantities are ~~CP~~ central processor utilizations in a computer system model wherein utilization is the percentage of time the central processor utilizes for processing.

3. (currently amended): A computer program product for providing a feedback control for a given set of entry and target control quantities  $\chi$  ~~and  $\mu$~~  and  $u$  of a system model, said computer program product comprising:

a computer readable medium having recorded thereon computer readable program code performing the method comprising a repetition of the following steps:

a) providing a time-dependent simulation system model of a system in a computer memory for simulating performance of real hardware for a number n of iterations;

~~ab)~~ providing a predetermined starting value  $\chi'_1$  for each of said entry control quantities  $\chi$  in said model,

~~bc)~~ running the model based on said starting values and obtaining a resulting actual value for each of said target control ~~quantities  $\mu$~~  quantities  $u$ ,

~~ed)~~ using the values obtained ~~for  $\mu$~~  for  $u$  to define a new start value for  $\chi$  for use in a repeated modeling step,

whereby the method comprises the following formula to calculate the respective next value of the entry control quantities:

$$\chi'_{n+1} = \frac{v_n}{1 + p_n(1 - v_n)} \quad (6a)$$

where  $\rho_n$  is ~~a suitable parameter~~ an accumulated wait time divided by an accumulated processing time of the system and

$$v_n = (n+1)u - nu_n \quad (6b)$$

$\chi'_n$  ~~is being~~ valid for the next iteration only ~~while  $\mu$~~  while  $u$ , and  $\rho_n$  are values measured from the beginning of the simulation.

4. (currently amended): The computer program product according to claim 3 wherein the method further comprises simulating a multi-processor system in which said control quantities are ~~CP~~ central processor utilizations in a computer system model wherein utilization is the percentage of time the central processor utilizes for processing.

5. (currently amended): A computer system for providing a feedback control for a given set of entry and target control quantities  $\chi$  ~~and  $\mu$~~  and  $u$  of a system model, the computer system comprising:

a) a computer memory having a time-dependent simulation system model of a system for simulating performance of real hardware for a number n of iterations;

~~b)~~ a starting value  $\chi'_1$  for each of said entry control quantities  $\chi$  in said model,

~~b)~~ a control element running the model based on said starting values and obtaining a resulting actual value for each of said target control ~~quantities  $\mu$~~  quantities  $u$ ,

~~c)~~ said control element using the values obtained ~~for  $\mu$~~  for  $u$  to define a new start value for  $\chi$  for use in a repeated modeling step,

whereby the control element uses the following formula to

calculate the respective next value of the entry control quantities:

$$x'_{n+1} = \frac{v_n}{1 + \rho_n(1 - v_n)} \quad (6a)$$

where  $\rho_n$  is ~~a suitable parameter~~ an accumulated wait time divided by an accumulated processing time of the system and

$$v_n = (n+1)u - nu_n \quad (6b)$$

$x'_n$  ~~is being~~ valid for the next iteration only ~~while  $\mu_n$~~  while  $u_n$  and  $\rho_n$  are values measured from the beginning of the simulation.

6. (currently amended): The computer system according to claim 5 wherein said control element simulates a multi-processor system in which said control quantities are ~~CP~~ central processor utilizations in a computer system model wherein utilization is the percentage of time the central processor utilizes for processing.